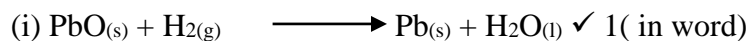


**FORM ONE CHEMISTRY**  
**END OF TERM 3 YEAR 2023**  
**MARKING SCHEME**

1. (a) If hydrogen gas is allowed to accumulate in the room; it can cause explosion. ✓1  
 (b) Reduction reaction. ✓1  
 (c) - Used in making oxy-hydrogen flame ✓1  
 - Used in hydrogenation of oils - Reject hardeny: Any one ✓1  
 - Used in manufacture of ammonia.



(ii) Reducing property

(iii) No reaction ✓ ½, sodium metal is more reactive than hydrogen, hence hydrogen cannot reduce oxide to element sodium.

2. (a) (i) Addiction and dependency ✓ ½  
 (ii) Stress / depression ✓ ½  
 (iii) Hallucination ✓ ½

- (b) (i) Glass does not rust. ✓ ½  
 (ii) Glass is transparent. ✓ ½  
 (iii) Glass can withstand heating. ✓ ½

- (c) (i) A – Pale blue zone ✓ ½  
 B – Green blue zone ✓ ½  
 C – Almost colourless zone ✓ ½

(ii) The pale blue zone

- (iii) - It's the hottest ✓ ½  
 - It's a clean flame ✓ ½

- (d) (i) The luminous flame.  
 (ii) When the air hole is closed.

(e) Non-luminous flame is clear ✓ ½ such that its difficult to be seen. Thus its adjusted to the luminous flame which is visible due to its brightness ✓ ½ // saves on fuel

- 3(a) P and S  
 (b) Q

- 4 i conc sodium hydroxide//KOH ✓ 1 mark  
 ii Cooled to  $-25^{\circ}\text{C}$  and turns to ice ✓ 1 mark

- iii -200 °c ✓ 1 mark
- iv N<sub>2</sub>, Ar, O<sub>2</sub> ✓ 1 mark

5, (i) Between (100 and 108)0C. ✓ 1

(ii) Impure water ✓ (½ Mark)

It boils over a temperature range ✓ (½ Mark)

(iii) It raises the boiling point of the water. ✓ 1

6. (i)  $\text{CaCO}_3 (\text{s}) + \text{H}_2\text{SO}_4 (\text{aq}) \longrightarrow \text{CaSO}_4 (\text{s}) + \text{H}_2\text{O} (\text{l}) + \text{CO}_2 (\text{g})$  ✓ 1 (in words)

7 (a) It reacts with the oxygen ✓ ½ present there and also with nitrogen ✓ ½ gas present there.

(b)  $2\text{Mg} (\text{s}) + \text{O}_2 (\text{g}) \longrightarrow 2\text{MgO} (\text{s})$  ✓ 1 Mark

$3\text{Mg} (\text{s}) + \text{N}_2 (\text{g}) \longrightarrow \text{Mg}_3\text{N}_2 (\text{s})$  ✓ 1 Mark

8. (i) - downward delivery of gas method//upward displacement of air

ii NO 1Mark

- The gas is less dense than air (✓ ½ Mark) hence can't be collected by downward delivery.

(iii) Concentrated sulphuric (VI) acid (✓ 1 Mark) *reject if "concentrated" is missing.*

(iv) - It's colourless ✓

- Odourless ✓

- Less dense than air ✓

Any two for (½ mk) each

9. lead (II) nitrate → lead (II) oxide + nitrogen (IV) oxide +Oxygen gas

Colourless

Oduorless

Slightly soluble in water

Slightly denser than air

- Oxyacetylene flame for welding ✓ ½ mark

- In hospitals for patients with breathing difficulties ✓ ½ mark

- In respiration ✓ ½ mark

- When mixed helium it is used by deep sea divers and mountain climbers ✓ ½ mark

10.i Pipette

ii Volumetric flask

Measuring cylinder

Syringe

Burette (any three)

11. (a) Red ✓ ½ and blue ✓ ½

(b) By solvent extraction

(c) -Unequal solubilities

- Different absorption abilities

- 13. i fractional distillation
- ii Separating funnel
- iii sublimation

- (14) *It acts as an impurity in the ice hence lowering its melting point. ✓1*  
(b) *Salt accelerates the rate of rusting of the iron parts of the motor vehicles. ✓1*

15. (a)

Name *Desiccator*

Use *Drying or keeping substances from moisture*

Use *Evaporating liquids to obtain crystals*

Name Evaporating dish

16.

- ✓ All the oxygen was used up

$$1000 - 800 = 200;$$

$$(200/1000) \times 100 = 20\%$$

It can be separated by physical means

The components are not chemically combined

